3.4 Performance Analysis

The performance analysis conducted for this Final SEIS supplements the alternatives analysis presented in the 1996 FEIS and quantifies and ranks the performance of the No-Action (Baseline), Tollroad/Freeway, Lemont Bypass and Enhanced Arterial Alternatives in meeting the following four principal needs:

1) Improve Access Between Residential Areas and Regional Job Centers,
2) Achieve Land Use and Transportation Planning Goals,
3) Improve Regional Mobility, and
4) Address Local System Deficiencies.

The analysis presented herein quantifies performance using empirical measures including travel time, safety and cost. The analysis found the Tollroad/Freeway to be the only Alternative to satisfy all four need criteria of the Purpose and Need. Table 3-8 summarizes the performance of Tollroad/Freeway Alternative compared to the Lemont Bypass and Enhanced Arterial Alternatives for each criteria of the Purpose and Need.

Table 3-8
Performance Summary by Alternative

Need Criteria	Performance
Improve Residential Area/Regional Job Center Access	The Tollroad/Freeway Alternative reduced projected year 2020 No-Action (Baseline) travel times to suburban job centers by 20 percent and performed: • 33 percent better than the Lemont Bypass Alternative, and • 185 percent better than the Enhanced Arterial Alternative.
Achieve Land Use and Transportation Planning Goals	The Tollroad/Freeway Alternative: • ranked as the most consistent Alternative to land use plans by municipal planning departments of the Project Corridor and Will County, • was identified as the alternative most suited to meeting planning goals by 100 percent of the elected officials representing Project Corridor municipal governments and Will County, and • caused environmental effects that were not substantively different that the Lemont Bypass and Enhanced Arterial Alternatives.
Improve Regional Mobility	The Tollroad/Freeway Alternative improved projected year 2020 No-Action (Baseline) travel times to: • 144 percent more of the region than the Lemont Bypass Alternative, and • over 2,000 percent more of the region than the Enhanced Arterial Alternative.
Address Local System Deficiencies	The Tollroad/Freeway Alternative reduced projected year 2020 No-Action (Baseline) crashes: • 6 times more than the Lemont Bypass Alternative, and • 45 times more than the Enhanced Arterial Alternative. The Tollroad/Freeway reduced projected year 2020 No-Action (Baseline) local travel times: • 30 percent more that the Lemont Bypass Alternative, and • 85 percent more that the Enhanced Arterial Alternative.

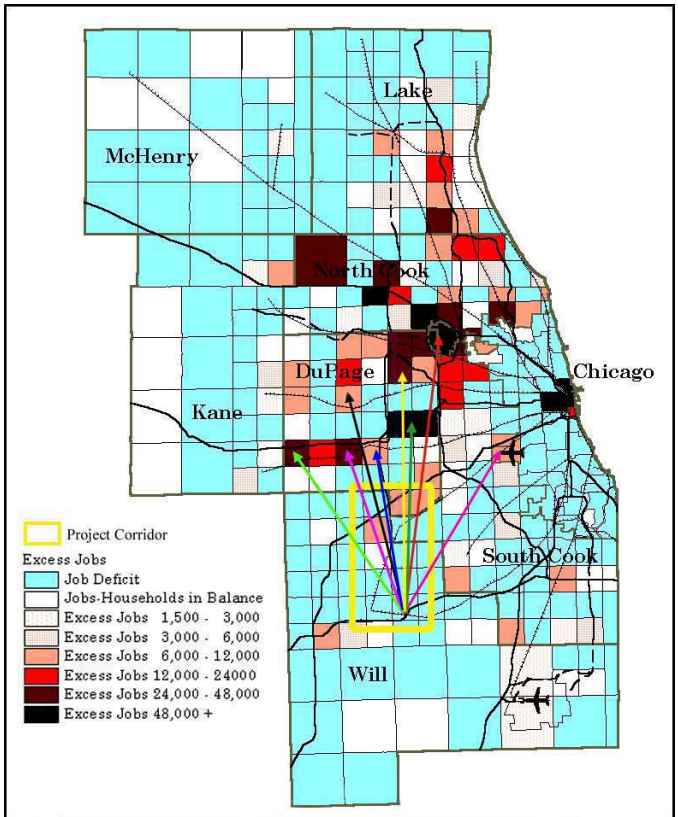
Condensed findings of the performance analysis, organized by need, are presented in the following sections of this Chapter. Detailed findings by need are presented in Draft SEIS, Section 3.4.

3.4.1 Improve Access Between Residential Areas and Regional Job Centers

Improve access between residential areas and regional job centers addresses a need to improve access from the Project Corridor to suburban regional job centers located in DuPage and northwest Cook Counties. The need for this improved access was documented in: The Socio-Economic and Land Use Impacts of the Proposed I-355 Extension, October 2000 (Draft SEIS, Appendix A). Section II, of this report found:

1. The Project Corridor is located in an area deficient in jobs.
2. Primary job centers for Project Corridor labor exist within the Chicago central area and DuPage and northwest Cook Counties.
3. Regional job growth has shifted from the Chicago central area to northwest Cook County, particularly in the vicinity of O'Hare Airport, which includes its nearby suburbs.
4. A Transportation System Improvement is needed to improve mobility from the Project Corridor to suburban job centers within DuPage and northwest Cook Counties.

These conclusions were based on population and employment forecasts adopted by the Northeastern Illinois Planning Commission (NIPC) in 1997, the most current data available at the initiation of this Final SEIS. These forecasts excluded the proposed Transportation System Improvement. Exhibit 3-2 presents year 2020 travel times to primary suburban job centers. Primary job centers are shaded in black. The accompanying table presents projected year 2020 travel times.



Percent Travel Time Reduction From the 2020 No-Action

									Avg.
Tollroad/ Freeway	19	24	20	21	25	20	13	17	20
Lemont Bypass	13	19	17	18	18	15	10	11	15
Enhanced Arterial	4	7	5	8	8	9	6	7	7

N

EXHIBIT 3-2

Year 2020 Residential/ Job Center Travel Times by Alternative

Source: Northeastern Illinois Planning Commission

Not to Scale

Each travel time is color coded to an arrow on the map indicating the destination job center.

Table 3-1
Percent Reduction in 2020 No-Action (Baseline) Residential/Job Center Travel Time

Alternative	Average Percent Travel Time Reduction
Tollroad/Freeway	20
Lemont Bypass	15
Enhanced Arterial	7

The alternatives analysis ranked the Tollroad/Freeway as the best Alternative for improving access to suburban job centers from the Project Corridor as measured by travel time. Table 3-1 lists the percent time reduction among the Build Alternatives. The Tollroad/Freeway Alternative reduced travel times to suburban job centers by an average of 20 percent compared to 2020 No-Action (Baseline).

This reduction was:

- 33 percent better than the Lemont Bypass Alternative, and
- 185 percent better than the Enhanced Arterial Alternative.

The cost savings associated with the reduced travel times attributable to the Build Alternatives over the No-Action (Baseline) Alternative totaled $1,479 per vehicle per year for the Tollroad/Freeway Alternative verses $1,200 for the Lemont Bypass and $502 for the Enhanced Arterial Alternatives. The cost savings of the Tollroad/Freeway were 23 and 195 percent greater than the Lemont Bypass and Enhanced Arterial Alternatives, respectively. Cost was measured as productivity cost defined as the Bureau of Labor Statistics average full-time hourly labor rate in year 2000 of $13.76 multiplied by the time savings in hours achieved by each Build Alternative over the year 2020 No-Action (Baseline).

The Tollroad/Freeway Alternative generated the greatest net travel time and cost savings due to efficiencies gained by providing 1) a direct route for north-south travel, 2) a facility built to interstate standards with full access control and grade separated interchanges, 3) a new bridge over the Des Plaines River, and 4) a facility consistent in design and function to the regional expressway system for which the Tollroad/Freeway Alternative would connect.

The Lemont Bypass Alternative, which ranked second in travel time and cost savings, gained efficiencies by providing an arterial for direct north-south travel within the Project Corridor and a new bridge over the Des Plaines River. However, the Lemont Bypass lost efficiencies due to a change in roadway type from a high capacity tollroad/freeway in the northern one-quarter of the Project Corridor to a lower capacity principal arterial within the Corridor's southern three quarters. This change in facility type from a tollroad/freeway with the full access control and grade separated interchanges to a principal arterial with limited access control and at-grade signalized intersections resulted in capacity reductions associated with lower travel speeds and congestion at intersections. This reduced capacity lowered overall travel time and cost savings relative to the Tollroad/Freeway Alternative.

The Enhanced Arterial Alternative ranked third in reducing travel time. Travel time benefits of this Alternative were primarily attributed to capacity improvements associated with adding lanes and maximizing access to, and the use of, three existing bridge cross-

ings within the Project Corridor over the Des Plaines River. However, efficiencies were lost due to the lower operating speeds of the arterials comprising this Alternative, as well as congestion resulting from minimal access control and numerous at-grade signalized intersections.

Work Trip Destinations

The reduction in travel time achieved by the Tollroad/Freeway Alternative, and to a lesser degree the Lemont Bypass and Enhanced Arterial Alternatives, would improve access to existing job centers within DuPage and western Cook Counties. Improved travel times would increase labor access from the Project Corridor to these job centers, thus supporting the growth of existing job centers and aiding in keeping the urbanized area compact. Improved travel times would also consolidate work trips toward DuPage and western Cook Counties. This would decrease trip lengths and competition for jobs within southern Cook County and the south side of Chicago, a secondary job center for the Project Corridor labor. This would increase the likelihood that residents of south Cook County and the south side of Chicago would find employment closer to their homes, thus reducing their work trip times and distance as well (ACG, 2000).

In sum, the travel time analysis ranked the Tollroad/Freeway Alternative best in reducing travel times from the Project Corridor to suburban job centers in DuPage and western Cook Counties. The analysis found the Tollroad/Freeway Alternative reduced travel times on average by 20 percent, and at rates 33 and 185 percent better than those of the Lemont Bypass and Enhanced Arterial Alternatives. By improving access to jobs within DuPage and western Cook Counties the Tollroad/Freeway Alternative would shorten and consolidate scattered work trips, reduce job competition in the high unemployment areas of south Cook County and the south side of Chicago and aid in keeping the urbanized areas compact by supporting growth of existing suburban job centers. Draft SEIS, Section 3.4.1 presents detailed findings of the travel time, cost and work trip destination analysis; Draft SEIS, Appendix B presents analysis methods.

3.4.2 Achieve Land Use and Transportation Planning Goals

Achieve land use and transportation planning goals addresses a need to provide a Transportation System Improvement that is consistent with existing land use and transportation plans at the regional, county and municipal level.

Between 1990 and 2000 Will County's population increased 41 percent, ranking it the second fastest growing county in Illinois (U.S. Census, 2000). This growth was concentrated in the County's northern one-third, including the Project Corridor. In 1990, the Project Corridor contained 41 percent of the population of Will County. By 2020 the Project Corridor is projected to contain 52 percent of the County's population. Demographic analysis has found population growth will continue at projected rates regardless of whether the Transportation System Improvement is implemented (ACG, 2000).

Accommodating growth in a manner that protects resources and maintains a high quality of life are primary planning goals of regional, county and local government jurisdictions within the Project Corridor. To this end, these government entities have adopted land use

plans. All land within the Project Corridor falls under the jurisdiction of a county or municipal plan.

Plan Consistency Review

Planning staff of Will County and the Project Corridor municipal governments reviewed the project Alternatives for consistency with their respective land use and transportation plans. The Alternatives were ranked on a scale from one to five with one being the least and five being the most consistent. The individual county and municipal rankings were then compiled into an overall Project Corridor average. The Tollroad/Freeway Alternative ranked as most consistent with county and municipal plans. Table 3-2 presents the Project Corridor ranking.

In addition, elected officials of Will County and Project Corridor municipalities were surveyed as to the effectiveness of each Alternative toward achieving the overall land use and transportation goals of their respective jurisdictions. The survey generated a 100 percent response rate and found 100 percent of the elected officials surveyed within the Project Corridor ranked the Tollroad/Freeway Alternative as best suited for achieving the land use and transportation goals of their jurisdictions.

Table 3-2
Plan Consistency Review Results
(Scale 1-5: 1= Least Consistent, 5= Most Consistent)

Alternative	Overall Ranking (1)
No-Action (Baseline) Alternative	1.5
Tollroad/Freeway Alternative	4.5
Lemont Bypass Alternative	3.1
Enhanced Arterial Alternative	2.3

(1) Overall Ranking is the average of individual rankings of county and local governments within the project corridor.

Overall County and Municipal Plan Consistency

At the county level, a principal goal of the Will County land use plan is to encourage compact contiguous growth that will result in urbanized development within the northern one-half of the County as a means to protect the rural character of the County's southern half. To this end, the Will County land use plan designates the northern portion of the County, including the Project Corridor for urban development (Exhibit 3-3).

At the local level, overall planning goals include focusing commercial and industrial development in compact areas where adequate infrastructure exists and providing a safe and efficient local transportation system. In terms of focusing growth, The Tollroad/Freeway Alternative, being the highest level facility, would maximize access to, and mobility within, the Project Corridor. This improved access and mobility would support other market forces, such as competitive housing prices, to more tightly focus development within northwestern Will County and the Project Corridor. This growth would be consistent with the Will County land use planning goals which prioritize focusing development within the northern portion of the county, an area where the majority of urban development already exists. The Tollroad/Freeway Alternative would also best facilitate local plans by encouraging a denser development pattern within the Corridor by acting to draw-in and concentrate development adjacent to the interchanges and along the facility (ACG, 2000).